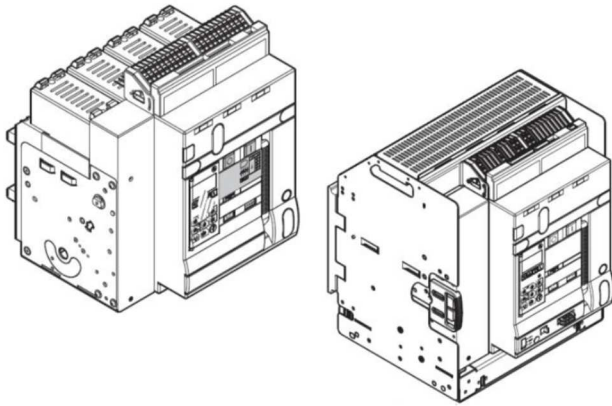


DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /

0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98



CONTENTS	PAGES
1. USE	1
2. RANGE	1
3. DIMENSIONS	1
4. OVERVIEW	5
5. ELECTRICAL CONNECTIONS	5
6. ELECTRICAL AND MECHANICAL CHARACTERISTICS	5
7. CONFORMITY	9
8. EQUIPMENTS AND ACCESSORIES	9
9. CURVES	12

Full technical sheet Y2958H

1. USE

DMX³ air circuit breakers offer optimal solutions to answer to protection requirements on the origin of the low voltage electrical installation (IEC/EN 60364-1) up to 4000A. Their electric and mechanical robustness, in addition to breaking capacity and chances of accessorizing, are perfectly suited for these requirements.

DMX³ offer a series of air switch-disconnector (I series) also, with high performances of insulation, robustness, closing and withstand capability.

Both series are furthermore developed for increase continuity service looking at the plant energy efficiency and in respect of "green aspects" (see item 7-Conformity).

2. RANGE

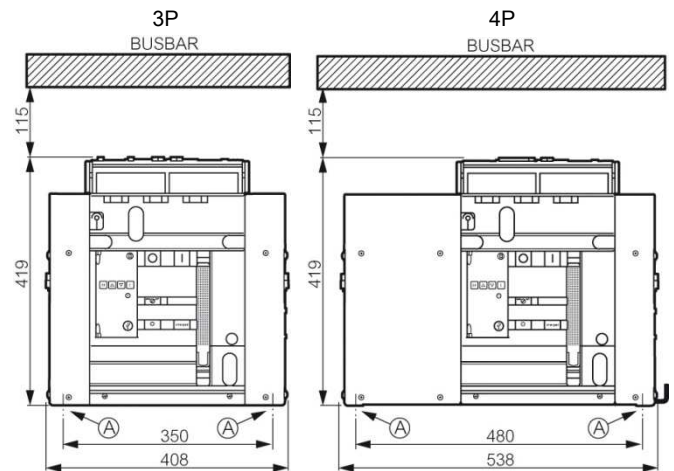
DMX ³ 4000 circuit breakers						
Fixed version						
	50kA		65kA		100kA	
I _n (A)	3P	4P	3P	4P	3P	4P
3200	0 286 27	0 286 37	0 286 47	0 286 57	0 286 67	0 286 77
4000	0 286 28	0 286 38	0 286 48	0 286 58	0 286 68	0 286 78
Draw-out version						
	50kA		65kA		100kA	
I _n (A)	3P	4P	3P	4P	3P	4P
3200	0 287 27	0 287 37	0 287 47	0 287 57	0 287 67	0 287 77
4000	0 287 28	0 287 38	0 287 48	0 287 58	0 287 68	0 287 78

DMX ³ -I 4000 switch disconnectors				
	Fixed version		Draw-out version	
I _n (A)	3P	4P	3P	4P
3200	0 286 87	0 286 97	0 287 87	0 287 97
4000	0 286 88	0 286 98	0 287 88	0 287 98

3. DIMENSIONS

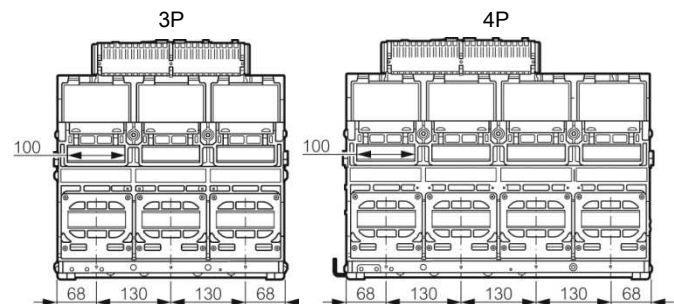
3.1 Fixed version

Frontal view



A = fixing point on plate of enclosure

Rear view



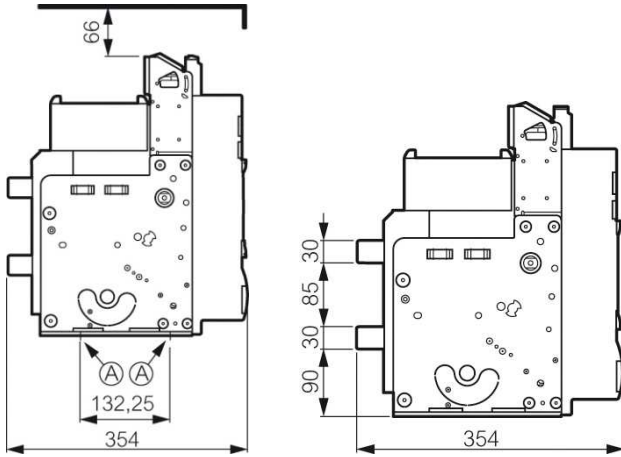
DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

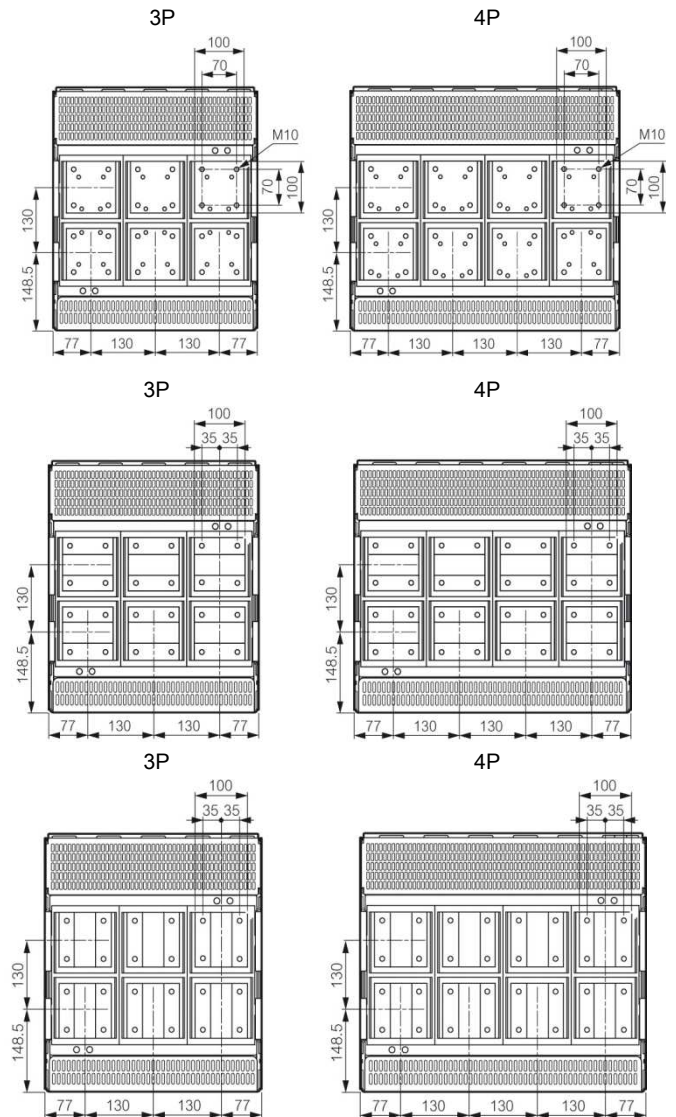
Lateral view

3P - 4P



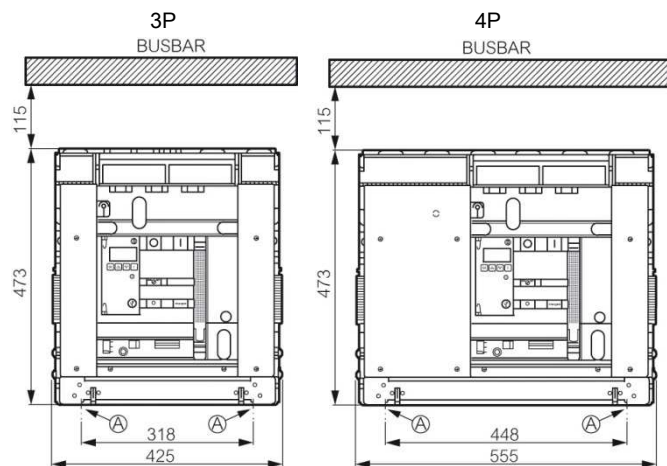
A = fixing point on plate of enclosure

Rear view



3.2 Draw-out version

Frontal view



A = fixing point on plate of enclosure

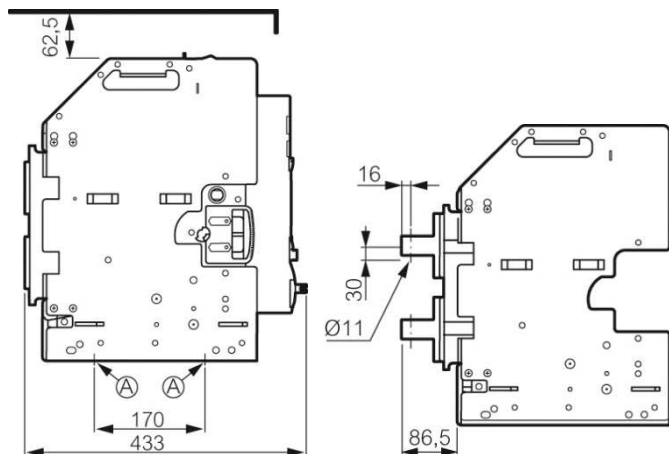
DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

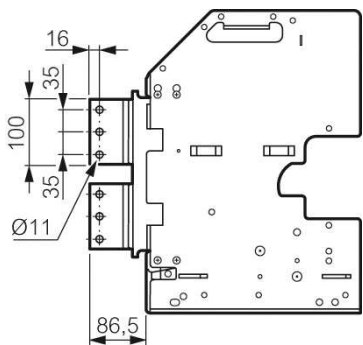
References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

Lateral view

3P - 4P

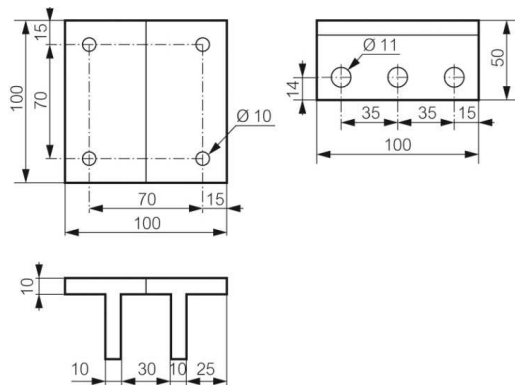
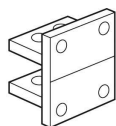


A = fixing point on plate of enclosure

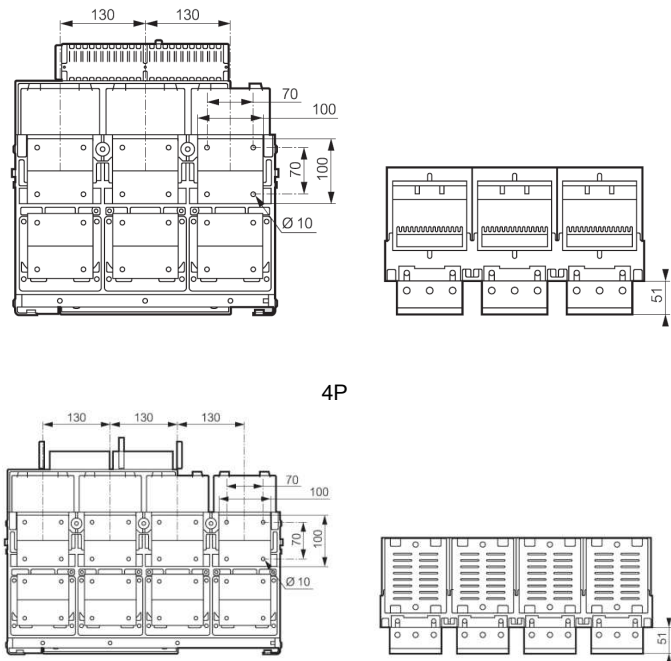


3.3 Rear terminals for fixed version – Flat connection

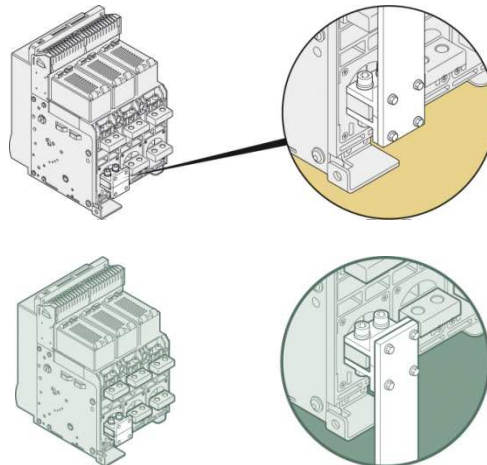
References	
3P	4P
0 288 92	0 288 93



3P



Mounting examples:



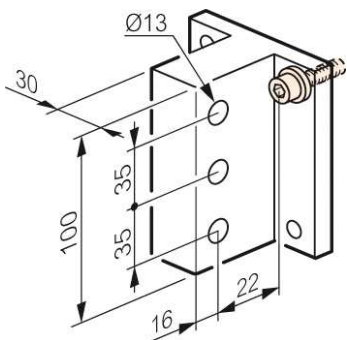
3.4 Rear terminals for fixed version – Vertical connection

DMX³ 4000 circuit breakers

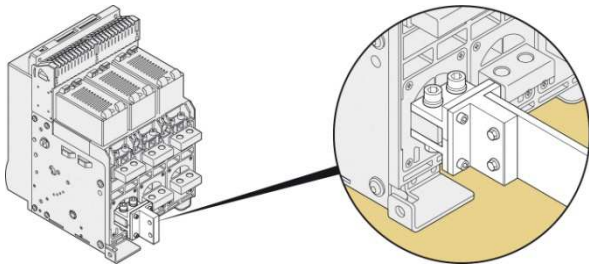
DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

References	
3P	4P
0 288 94	0 288 95

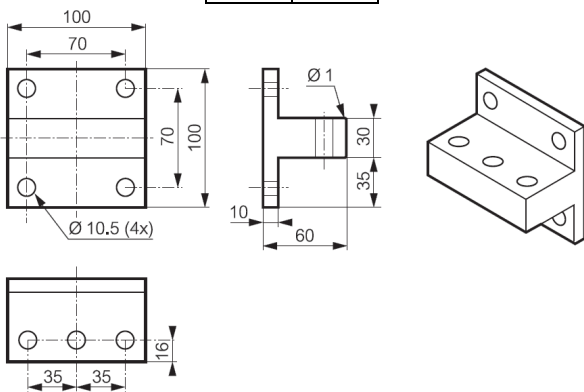


Mounting example:

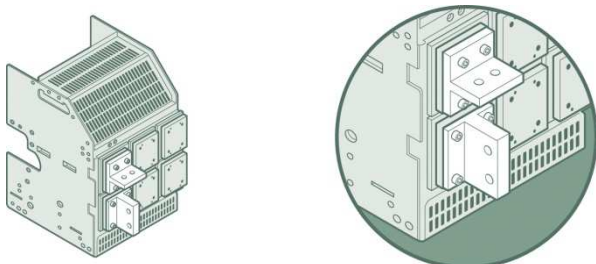


3.5 Rear terminals for Draw-out version – Flat/vertical connection

References	
3P	4P
0 288 94	0 288 95

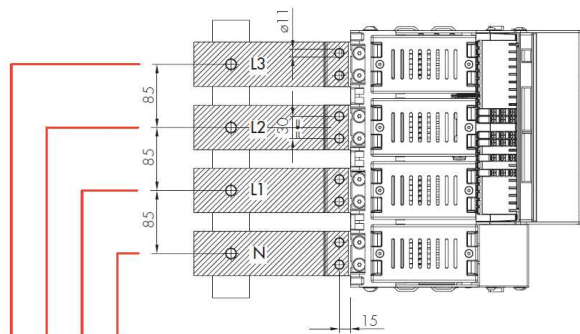
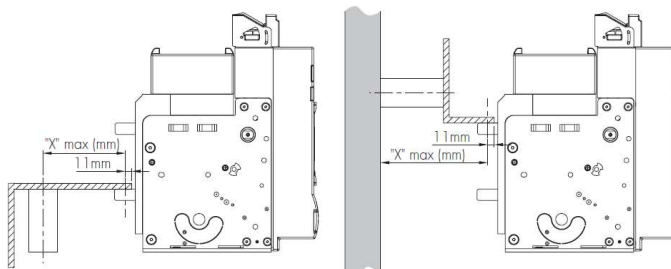


Mounting example:



3.6 Terminations support distances – Fixed version

I_{cc} (kA)	≤ 50	≤ 65	≤ 100
X max (mm)	300	250	150



DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /

0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

4. OVERVIEW

4.1 Supplied with

ACBs are equipped with auxiliary contacts (4 NO/NC, expandable up to 10) and doorframe; besides:

- Fixed version: equipped with rear terminals for horizontal connections with bars.
- Draw-out version: equipped with flat rear terminals for connections with bars and delivered with base equipped with extraction crank and isolating components.
- Door sealing.

5. ELECTRICAL CONNECTIONS

Use only as a general guideline to select products. Due to extensive variety of switchgear installation shapes and conditions of use, the solution used must always be verified. If inter-poles air distance is less than 20mm, it's recommended use of phase insulators or insulated bars.

Minimum cross section of COPPER busbars per pole

. DMX³ and DMX³-I fixed and draw-out versions

Rated current (A)	Vertical bars (mm)	Horizontal bars (mm)
630	1 bar 40x10 or 2 bars 40x5	2 bars 40 x 5
800	1 bar 50x10 or 2 bars 50x5	2 bars 50 x 5
1000	1 bar 50x10 or 2 bars 50x5	2 bars 60 x 5
1250	2 bars 60 x 5	2 bars 80 x 5
1600	2 bars 80 x 5	2 bars 50 x 10
2000	2 bars 50 x 10	2 bars 60 x 10
2500	3 bars x 50 x 10	3 bars x 60 x 10
3200	3 bars 100 x 10	4 bars 80 x 10
4000	4 bars 100 x 10	5 bars 100 x 10

Minimum cross section of ALUMINIUM busbars per pole

. DMX³ and DMX³-I fixed and draw-out versions

Rated current (A)	Vertical bars (mm)	Horizontal bars (mm)
630	2 bars 40 x 8	2 bars 40 x 8
800	2 bars 50 x 8	2 bars 50 x 8
1000	2 bars 50 x 8	2 bars 50 x 10
1250	2 bars 50 x 10	2 bars 60 x 10
1600	2 bars 60 x 10	4 bars 50 x 8
2000	4 bars 50 x 8	4 bars 50 x 10
2500	4 bars 60 x 10	4 bars 80 x 10
3200	4 bars 150 x 10	5 bars 150 x 10
4000	5 bars 150 x 10	6 bars 150 x 10

6. ELECTRICAL AND MECHANICAL CHARACTERISTICS

Circuit breaker

Electrical data refers to IEC/EN 60947-2 standard

		DMX ³ 4000		
		DMX ³ - N 50 kA	DMX ³ - H 65 kA	DMX ³ - L 100 kA
Frame current (A)		4000		
Number of poles		3P - 4P		
Rated current I _n (A)		3200 / 4000		
Release type		electronic		
Rated insulation voltage U _i (V)		1000		
Rated impulse withstand voltage U _{imp} (kV)		12		
Rated operational voltage (50/60Hz) U _e (V)		690		
Category of use		B		
Rated ultimate short-circuit breaking capacity I _{cu} (kA)	220 / 240 V AC	50	65	100
	380 / 415 V AC	50	65	100
	440 / 460 V AC	50	65	100
	480 / 500 V AC	50	65	100
	600 V AC	50	65	75
690 V AC	50	55	65	
Rated service short-circuit breaking capacity I _{cs} (% I _{cu})		100%		
Rated short-circuit making capacity I _{cm} (kA)	220 / 240 V AC	105	143	220
	380 / 415 V AC	105	143	220
	440 / 460 V AC	105	143	220
	480 / 500 V AC	105	143	220
	600 V AC	105	132	165
690 V AC	105	121	143	
Rated short time withstand current I _{sw} (kA) for t = 1s	220 / 240 V AC	50	65	85
	380 / 415 V AC	50	65	85
	440 / 460 V AC	50	65	85
	480 / 500 V AC	50	65	85
	600 V AC	50	60	75
690 V AC	50	55	65	
Rated short time withstand current I _{sw} (kA) for t = 3s	220 / 240 V AC	50	65	65
	380 / 415 V AC	50	65	65
	440 / 460 V AC	50	65	65
	480 / 500 V AC	50	65	65
	600 V AC	50	65	65
690 V AC	50	65	65	
Individual pole short-circuit current I _{tr} (kA)	220 / 240 V AC	1.2 times the maximum setting of the definite time delay release tripping current (I _{sd}) ⁽¹⁾		
	380 / 415 V AC			
	440 / 460 V AC			
	480 / 500 V AC			
	600 V AC			
690 V AC				
Suitable for insulation		Yes		
Neutral protection (% I _n)		0 - 50 - 100		
Endurance (cycles)	mechanical	10000 (w/o maintenance); 20000 (with maintenance)		
	electrical	10000 (w/o maintenance)		
Weight (Kg)	3P - Fixed	59		
	3P - Drawout ⁽²⁾	108		
	4P - Fixed	76		
	4P - Drawout ⁽²⁾	137		
Height (mm)	3P - Fixed	419		
	3P - Drawout	465		
	4P - Fixed	419		
	4P - Drawout	465		
Depth (mm)	3P - Fixed	354		
	3P - Drawout	433		
	4P - Fixed	354		
	4P - Drawout	433		
Width (mm)	3P - Fixed	408		
	3P - Drawout	425		
	4P - Fixed	538		
	4P - Drawout	555		
Temperature	operation	-25°C to +70°C		
	storage	-25°C to +85°C		
Maintenance		Yes (see specific guide)		

⁽¹⁾ For more details, please consult Legrand

⁽²⁾ Weights for draw-out releases are to be intended with base

DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /

0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

Switch disconnector

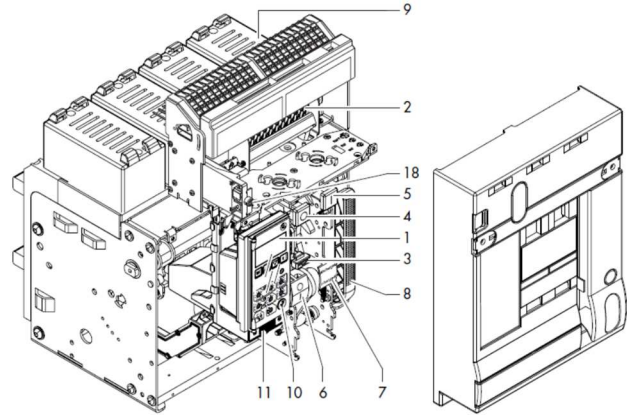
Electrical data refers to IEC/EN 60947-3 standard

		DMX ³ -I 4000
Frame current (A)		4000
Number of poles		3P - 4P
Rated current I _e (A)		3200 / 4000
Rated insulation voltage U _i (V)		1000
Rated impulse withstand voltage U _{imp} (kV)		12
Rated operational voltage (50/60Hz) U _e (V)		690
Category of use		AC23A
Rated short circuit making capacity I _{cm} (kA)	220 / 240 V AC	187
	380 / 415 V AC	187
	440 / 460 V AC	187
	480 / 500 V AC	187
	600 V AC	165
	690 V AC	143
Rated short time withstand current I _{cw} (kA) for t = 1s	220 / 240 V AC	85
	380 / 415 V AC	85
	480 / 500 V AC	85
	600 V AC	75
	690 V AC	65
Rated short time withstand current I _{cw} (kA) for t = 3s	220 / 240 V AC	65
	380 / 415 V AC	65
	480 / 500 V AC	65
	600 V AC	65
	690 V AC	65
Suitable for insulation		Yes
Endurance (cycles)	mechanical	10000 (w/o maint.); 20000 (with maint.)
	electrical	10000 (w/o maint.)
Weight (Kg)	3P - Fixed	59
	3P - Drawout ⁽¹⁾	108
	4P - Fixed	76
	4P - Drawout ⁽¹⁾	137
Height (mm)	3P - Fixed	419
	3P - Drawout	465
	4P - Fixed	419
	4P - Drawout	465
Depth (mm)	3P - Fixed	354
	3P - Drawout	433
	4P - Fixed	354
	4P - Drawout	433
Width (mm)	3P - Fixed	408
	3P - Drawout	425
	4P - Fixed	538
	4P - Drawout	555
Temperature	operation	-25°C to +70°C
	storage	-25°C to +85°C
Maintenance		Yes (see specific guide)

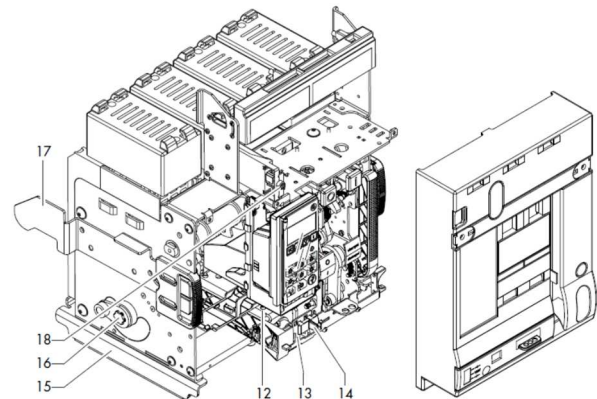
⁽¹⁾ Weights for draw-out releases are to be intended with base

6.1 Main parts constituting the circuit breaker

Fixed version



Draw-out version



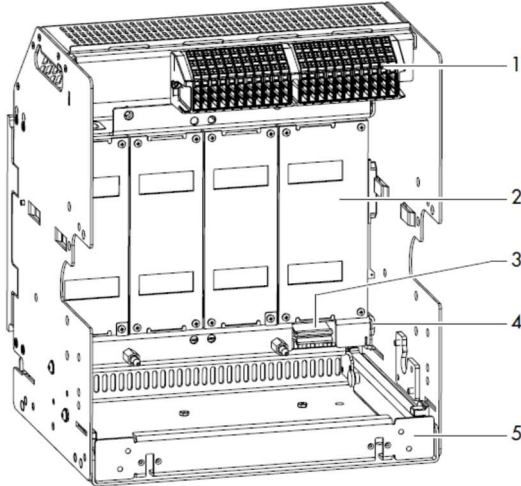
1. Protection Unit
2. Auxiliary Contacts
3. Reset button
4. OFF button
5. ON button
6. ON-OFF Indication
7. Spring Status Indication
8. Charging handle
9. Dejon cell
10. Mini USB cover
11. Battery cover
12. Draw-out mechanism
13. Draw-out bar insertion
14. Racking shutter
15. Support to place the breaker in draw-out cassette
16. Draw-out main shaft
17. Insertion guide
18. Dielectric test selector (if present)

DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

Draw-out base



1. Aux terminal block
2. Safety shutter
3. Earth connection
4. Earth terminal
5. Removable cassette

6.2 Regulated ranges

I _n (A)	Phases			
	I _r		I _{sd}	
	0.4 x I _n	1 x I _n	1.5 x I _{r min}	10 x I _{r max}
3200	1280	3200	1920	32000
4000	1600	4000	2400	40000

* For neutral adjustment, as explained in technical sheet, please consider the values ratios 0%, 50% and 100% on set currents.

6.3 Power losses per pole at I_n / I_e

Power Losses (W) DMX ³ 4000 and DMX ³ -I 4000			
Version		Fixed	Draw-out
Rated current (A)	3200	83.3	163.8
	4000	130.1	256.0

Note: power loss in the table above are referred and measured as described in the standard IEC 60947-2 (Annex G) for circuit-breakers and IEC 60947-1 for switches. Values in the table are referred to a single phase.

6.4 Deratings

6.4.1 Temperature

Rated current and his adjustment has to be considered relating to a rise or fall of ambient temperature and to a different version or installation conditions. The table below indicates the maximum long-time (LT) protection setting depending on the ambient temperature.

Temperature deratings for DMX³ and DMX³-I fixed version - horizontal terminals

Temperature	Fixed version									
	up to 40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ 4000	3200	1	3200	1	3200	1	3200	1	3040	0.95
DMX ³ -I 4000	4000	1	3920	0.98	3680	0.92	3440	0.86	3120	0.78

Temperature deratings for DMX³ and DMX³-I draw-out versions - horizontal terminals

Temperature	Draw-out version									
	up to 40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ 4000	3200	1	3200	1	3200	1	3072	0.96	2880	0.9
DMX ³ -I 4000	4000	1	3760	0.974	3440	0.86	3200	0.8	2960	0.74

6.4.2 Specific conditions use

Climatic conditions

according to IEC/EN 60947-1 Annex Q, Cat. F subject to temperature, humidity, vibration, shock and salt mist.

Electromagnetic disturbances (EMC)

for DMX³ 4000 according to IEC/EN 60947-2 Annex F.

6.4.3 Altitude

Altitude derating for DMX³ and DMX³-I

Altitude (m)	< 2000	3000	4000	5000
Rated current (A)	I _n	0.98 x I _n	0.94 x I _n	0.9 x I _n
Rated voltage U _e (V)	690	600	500	440
Rated insulation voltage U _i (V)	1000	900	750	600
Dielectric withstand (V)	3500	3200	2500	2000

DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

6.5 Electronic protection unit

All DMX³ 4000 can be equipped by an MP4 or MP6 electronic protection unit which main characteristics are:

-Adjustments accomplished by selector switches (MP4) or touchscreen (MP6)

-Long delay (I_r) threshold based on true RMS value of the current

-Integrated LCD screen display electrical values, settings and logs (only for MP4 release)

-Integrated 3.5" colour touchscreen to display electrical values, settings, logs and measures (only for MP4 release)

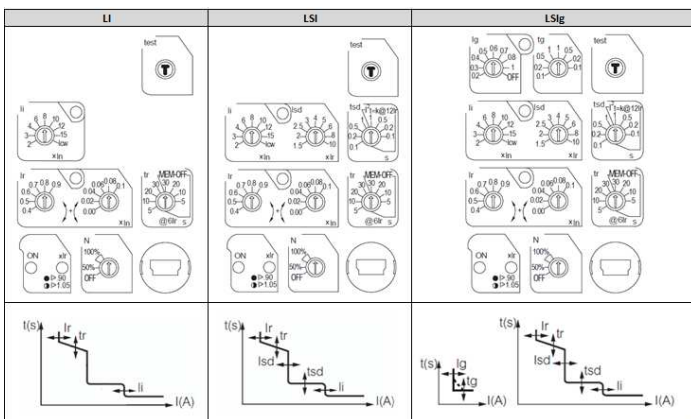
All protection units have onboard a mini USB type "B" socket for maintenance purposes.

6.5.1 Protection unit types

Protection unit are available in MP4 and MP6 type as following

Type	Function	Data		Reference
		visualization	adjustment	
MP4	LI	on LCD screen	knob	0 288 00
	LSI	on LCD screen	knob	0 288 01
	LSIg	on LCD screen	knob	0 288 02
MP6	LSI	on screen	touch	0 288 03
	LSIg	on screen	touch	0 288 04

MP4 detail



Protective functions

- I_r : against overloads with long inverse time delay trip
- t_r : long inverse time delay trip
- I_{sd} : against short-circuits
- t_{sd} : independent time delay ($t=k$)
: inverse short time delay ($I^2t=k$)
- I_i : against short-circuits with adjustable threshold
- I_{ov} : against short-circuit with fixed threshold (factory imposed)
- I_g : against earth fault
- t_g : independent time delay ($t=k$) or inverse short time delay ($I^2t=k$)

6.5.2 Trip threshold (and maximum setting range)

MP4 protection unit

	LI	LSI	LSIg	Maximum possible range of setting	Tolerance
I_r	$0.4 \div 1 \times I_n$	$0.4 \div 1 \times I_n$	$0.4 \div 1 \times I_n$	1 st selector $0.4 \div 0.9 \times I_n$ (step 0.1) 2 nd selector $0.00 \div 0.1 \times I_n$ (step 0.02)	$\pm 20\%$
t_r	$5 \div 30s$	$5 \div 30s$	$5 \div 30s$	at $6 \times I_r$, MEM ON (5-10-20-30s)	-
	$5 \div 30s$	$5 \div 30s$	$5 \div 30s$	at $6 \times I_r$, MEM OFF (5-10-20-30s)	
I_{sd}	$10 \times I_r$	$1.5 \div 10 \times I_r$	$1.5 \div 10 \times I_r$	$1.5-2-2.5-3-4-5-6-8-10 \times I_r$	$\pm 20\%$
t_{sd}	1s	$0.1 \div 1s$	$0.1 \div 1s$	$t = k$ (0.1-0.2-0.5-1s)	-
				$I^2t = k$ (0.3-0.2-0.1-0.01s)	
I_i	$2 \div 15 \times I_n$	$2 \div 15 \times I_n$	$2 \div 15 \times I_n$	2-3-4-6-8-10-12-15 $\times I_n$	$\pm 10\%$
I_{ov}	I_{cw}/U_e	I_{cw}/U_e	I_{cw}/U_e	override instantaneous fixed threshold	$\pm 10\%$
I_g	N/A	N/A	$0.2 \div 1 \times I_n$	0.2-0.3-0.4-0.5-0.6-0.7-0.8-1	$\pm 20\%$
t_g	N/A	N/A	$0.1 \div 1s$	$t = k$ (0.1-0.2-0.5-1s)	-
				$I^2t = k$ (0.1-0.2-0.5-1s)	

MP6 protection unit

	LSI	LSIg	Maximum possible range of setting	Tolerance
I_r	$0.4 \div 1 \times I_n$	$0.4 \div 1 \times I_n$	$0.4 \div 1 \times I_n$ (step 0.1)	$\pm 20\%$
t_r	$5 \div 30s$	$5 \div 30s$	at $6 \times I_r$, MEM ON (5-10-20-30s)	-
	$5 \div 30s$	$5 \div 30s$	at $6 \times I_r$, MEM OFF (5-10-20-30s)	
I_{sd}	$1.5 \div 10 \times I_r$	$1.5 \div 10 \times I_r$	$1.5-2-2.5-3-4-5-6-8-10 \times I_r$	$\pm 20\%$
t_{sd}	$0.1 \div 1s$	$0.1 \div 1s$	$t = k$ (0 \div 1 step 0.1)	-
			$I^2t = k$ (0 \div 1 step 0.1)	
I_i	$2 \div 15 \times I_n$	$2 \div 15 \times I_n$	2-3-4-6-8-10-12-15 $\times I_n$	$\pm 10\%$
I_{ov}	I_{cw}/U_e	I_{cw}/U_e	override instantaneous fixed threshold	$\pm 10\%$
I_g	N/A	$0.2 \div 1 \times I_n$	0.2-0.3-0.4-0.5-0.6-0.7-0.8-1	$\pm 20\%$
t_g	N/A	$0.1 \div 1s$	$t = k$ (0.1-0.2-0.5-1s)	-
			$I^2t = k$ (0.1-0.2-0.5-1s)	

6.5.3 Batteries for protection units

All protection units are equipped with batteries for powering in case of mains fault or when the breaker is open or not connected. All settings, stored parameters and logs are kept saved on protection unit's memory also if batteries are removed to be replaced.

The protection unit has to be equipped with four CR2 Lithium batteries (voltage 3V).

6.6 Common accessories for protection units

- External auxiliary power supply ref. 0 288 06

Input supply	24 V DC or AC @50-60Hz
Output current	250 mA
Operating temperature (°C)	-10 \div +55
Input power supply (W / VA)	≥ 5
Dimension	35mm Din rail: 2 modules

- Communication option ref. 0 288 05
- External neutral for DMX³ 4000 ref. 0 288 11
- Programmable output module ref. 0 288 12

Input supply	24 V DC or AC @50-60Hz
Contact rated current (A)	AC: 250V 8A DC: 30V 8A; 110V 0.3A; 230V 0.12A
Operating temperature (°C)	-10 \div +55
Dimension	35mm Din rail: 6 modules

DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /

0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

7. CONFORMITY

DMX³ range of product concerning circuit-breakers and switch-disconnectors exceed compliance with the IEC/EN standard 60947-2 and 60947-3 respectively. Certification available by IECEE CB-scheme or LOVAG Compliance scheme.

Marks as CCC (China), EAC (Eurasian Federation) or different local certification are available.

DMX³ are in conformity with the Lloyds Shipping Register, RINA and Bureau Veritas Marine.

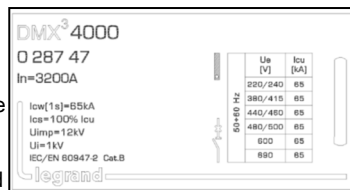
DMX³ respect the European Directives REACH, RoHS, RAEE and Product Environment Product (PEP Ecopassport) are available.

7.1 MARKING

Product is provided with labelling in full conformity to the referred standard and directives requirements by laser or sticker labels as:

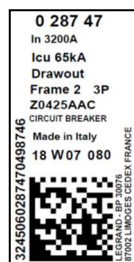
Product laser label on front

- Manufacturer responsible
- Denomination, type product, code
- Standard conformity
- Standard characteristics declared
- coloured identification of I_{cu} at 415V



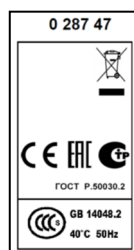
Product sticker label on side

- Manufacturer responsible
- Denomination and type product
- Standard conformity
- Mark/Licence (if any)
- Directive requirements
- bar code identification product
- Manufacturing Country



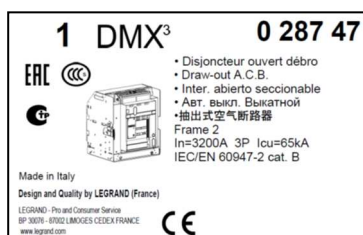
Mark sticker label on side

- Product code
- Mark/Licence (if any)
- Country deviation, if any



Packaging sticker label

- Manufacturer responsible
- Denomination and type product
- Standard conformity
- Mark/Licence (if any)
- Directive requirements



-bar code identification product

8. EQUIPMENTS AND ACCESSORIES

Note: where not specified, accessories are common for every DMX³ (N, H, L and switch disconnector).

8.1 Control auxiliaries

- shunt trip: when energised the circuit breaker will be tripped

24 V AC and DC	ref. 0 288 48
48 V AC and DC	ref. 0 288 49
110 ÷ 130 V AC and DC	ref. 0 288 50
220 ÷ 250 V AC and DC	ref. 0 288 51
415 ÷ 480 V AC	ref. 0 288 52

Rated operating voltage (U _c)	AC: 24V;48V;110V ÷ 130V;220V ÷ 250V;415V/440V/480V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range (%U _c)	70 ÷ 110
Pick-up consumption (W / VA)	500 / 500
Pick-up time (ms)	180
Hold consumption (W / VA)	5 / 5
Minimum opening time (ms)	30
Insulation voltage (kV)	2.5

- undervoltage releases: when the coil is de-energised, the circuit breaker will be tripped

24 V AC and DC	ref. 0 288 55
48 V AC and DC	ref. 0 288 56
110 ÷ 130 V AC and DC	ref. 0 288 57
220 ÷ 250 V AC and DC	ref. 0 288 58
415 ÷ 440 V AC	ref. 0 288 59

Rated operating voltage (U _c)	AC: 24V;48V;110V ÷ 130V;220V ÷ 250V;415V/440V/480V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range (%U _c)	85 ÷ 110
Pick-up consumption (W / VA)	500 / 500
Pick-up time (ms)	180
Hold consumption (W / VA)	5 / 5
Minimum opening time (ms)	60
Insulation voltage (kV)	2.5

- Modules for delayed tripping, to be used with undervoltage releases

110 V AC and DC	ref. 0 288 62
230 V AC and DC	ref. 0 288 63

Rated operating voltage (U _c)	AC: 110V / 230V DC: 110V / 230V
Voltage range (%U _c)	85 ÷ 110
Pick-up consumption (W / VA)	16.5 (@110V) / 34.5 (@230V)
Time delay (s)	1 ⁽¹⁾
Hold consumption (W / VA)	5 (@110V) / 10 (@230V)
Opening threshold	0.35 ÷ 0.7 U _n
Closing threshold	0.85 U _n
Operating temperature (°C)	-10 ÷ +55

⁽¹⁾ It is possible to connect up to 3 modules - 1s of delay for each module installed

DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /

0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

- Motor operators connect to a release coil (UVR or trip on energising) and a closing coil

24 V AC and DC	ref. 0 288 34
48 V AC and DC	ref. 0 288 35
110 ÷ 130 V AC and DC	ref. 0 288 36
220 ÷ 250 V AC and DC	ref. 0 288 37
415 ÷ 440 V AC	ref. 0 288 38
480 V AC and DC	ref. 0 288 40

Rated operating voltage (U_c)	AC: 24V;48V;110V ÷ 130V;220V÷250V;415V ÷ 440V;480V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range (%U_c)	85 ÷ 110
Maximum Power consumption (W / VA)	240/240
Maximum peak current for 80ms	(2 ÷ 3) x I _n
Charging time (s)	7
Operating frequency (n° / min)	1

- Closing coils
To enable remote closing of the circuit breaker if the closing spring is charged
- | | |
|-----------------------|---------------|
| 24 V AC and DC | ref. 0 288 41 |
| 48 V AC and DC | ref. 0 288 42 |
| 110 ÷ 130 V AC and DC | ref. 0 288 43 |
| 220 ÷ 250 V AC and DC | ref. 0 288 44 |
| 415 ÷ 480 V AC | ref. 0 288 45 |

Rated operating voltage (U_c)	AC: 24V;48V;110V ÷ 130V;220V ÷ 250V;415V/440V/480V DC: 24V; 48V; 110V ÷ 130V; 220V ÷ 250V
Voltage range (%V_n)	85 ÷ 110
Pick-up consumption (W / VA)	500 / 500
Pick-up time (ms)	180
Hold consumption (W / VA)	5 / 5
Maximum closing time (ms)	50
Insulation voltage (kV)	2.5

8.2 Signalling auxiliaries

- Signalling contact for draw-out version
Inserted / test / draw-out signalling contact
3 changeover contacts per position ref. 0 288 13

Rated operating voltage (U_c)	DC	250V 0.3A 125V 0.6A
	AC	250V 16A 125V 16A

- Contact "ready to close" with charged springs ref. 0 288 14

Rated operating voltage (U_c)	AC	250V 16A 125V 16A
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- Additional signalling contact ref. 0 288 15

Rated operating voltage (U_c)	DC	250V 0.3A 125V 0.6A
	AC	250V 16A 125V 16A

- Signalling contact for auxiliaries (ST, CC and UVR) ref. 0 288 16

Rated operating voltage (U_c)	DC	250V 0.3A 125V 0.6A
	AC	250V 16A 125V 16A

8.3 Locking

- Key locking in "open" position
 - 1 lock + 1 Profalux star type flat key ref. 0 288 30
 - 1 lock + 1 Ronis type flat key ref. 0 288 31
 - 2 holes support frame for locks ref. 0 288 28
 - Set of 5 key barrels with Ronis type flat key ref. 0 288 29

- Key locking in "draw-out" position
 - Mounting of the lock on the base
 - Lock and key Profalux type star key ref. 0 288 32
 - Lock and key Ronis type flat key ref. 0 281 33

- Door locking
Prevents opening of the door with the circuit breaker closed
Left-hand and right-hand side mounting ref. 0 288 20

- Padlocks in "open" position
 - Padlocking system for ACB (padlock not supplied) ref. 0 288 21
 - Padlock for buttons ref. 0 288 24
 - Padlocking system for shutters (padlock not supplied) ref. 0 288 26

8.4 Accessories

- Mechanical operations counter: to count total number of operation cycles of device ref. 0 288 23
- Rating mis-insertion device: to prevent the insertion of a draw-out circuit breaker into an incompatible base ref. 0 288 25
- Lifting plate ref. 0 288 79
- Inserted/test/drawout lock button ref. 0 288 17

8.5 Fixing devices for DMX³ and DMX³-I 4000

Specific instruction sheets are provide to integrate DMX³ and DMX³-I 4000 into XL³ enclosures ranges (fixing plates, metal faceplates for circuit breakers and cable sleeves, etc...).

8.6 Equipment for conversion of a fixed device into draw-out device

- Bases for draw-out device
 - For DMX³ / DMX³-I 4000 frame 3P ref. 0 289 04
 - For DMX³ / DMX³-I 4000 frame 4P ref. 0 289 05
- Transformation kit for draw-out version
 - For DMX³ / DMX³-I 4000 frame 3P ref. 0 289 11
 - For DMX³ / DMX³-I 4000 frame 4P ref. 0 289 12

8.6 Equipment for interlocking

- The mechanical interlock is set up using cables and can interlock 2 or 3 devices, which may be different type in a vertical or horizontal configuration. The interlock unit is mounted on the right-hand side of the device. Interlock cables to be ordered separately.
- Interlock for DMX³ 4000 ref. 0 288 65

DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

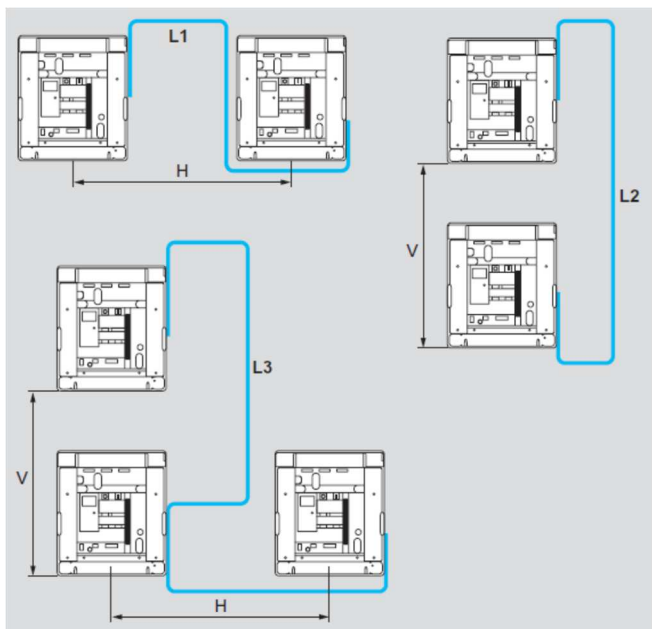
References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /

0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

8.8 Interlock cables

• 1000 mm	ref. 0 289 17
• 1500 mm	ref. 0 289 18
• 2600 mm	ref. 0 289 20
• 3000 mm	ref. 0 289 21
• 3600 mm	ref. 0 289 22
• 4000 mm	ref. 0 289 23
• 4600 mm	ref. 0 289 24
• 5600 mm	ref. 0 289 25

Choice of interlock cable



Calculation of cable length:

$$L1 = 1430 + H$$

$$L2 = 1570 + V$$

$$L3 = 1430 + V + H$$

8.9 Rear terminals

- For fixed version

For flat connections with bars, 3P ref. 0 288 92

For flat connections with bars, 4P ref. 0 288 93

For vertical connections with bars, 3P ref. 0 288 94

For vertical connections with bars, 4P ref. 0 288 95

Note 1: refs. 0 288 92/93 to be fixed onto horizontal rear terminals of the circuit breaker

Note 2: refs. 0 288 94/95 to be used to transform a flat connection into a vertical one. To be fixed onto refs. 0 288 92/93 according to the number of poles.

- For draw-out version

For vertical or horizontal connections with bars, 3P ref. 0 288 94

For vertical or horizontal connections with bars, 4P ref. 0 288 95

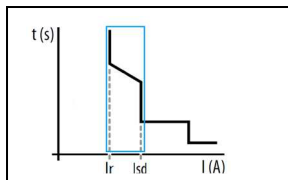
Note: to be fixed directly onto plate rear terminals of the circuit breaker

8.10 Insulating shields

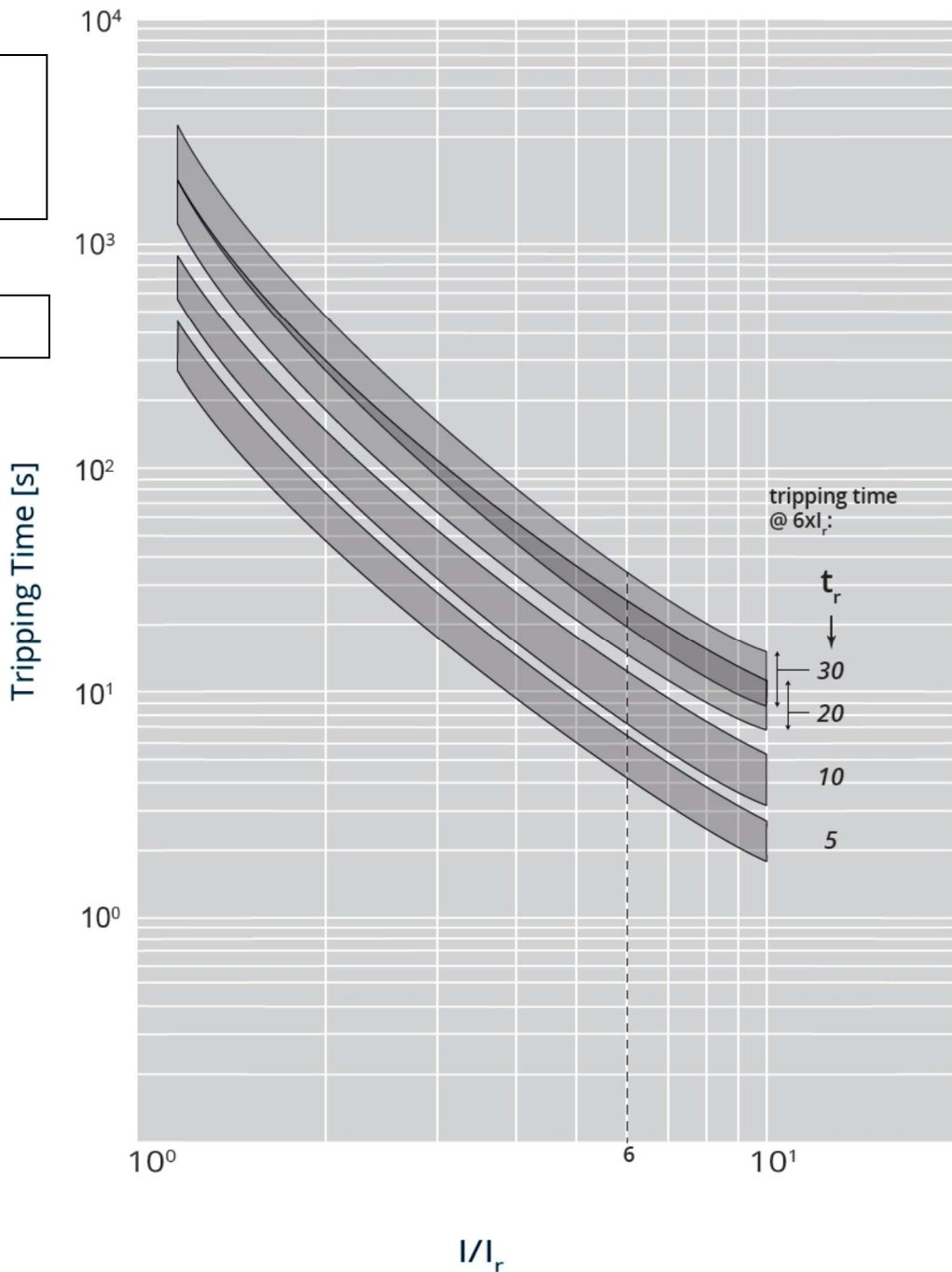
• Fixed version 3P	ref. 0 288 98
• Fixed version 4P	ref. 0 288 99
• Draw-out version 3P	ref. 0 288 18
• Draw-out version 4P	ref. 0 288 19

9. CURVES

9.1.1 TRIPPING CURVE FOR DMX³ 4000 protection units: long time protection detail



Update: 27/03/2018

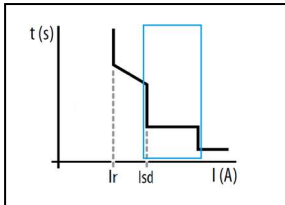


Value	Description
I	current
I _r	long time setting current
t _r	long time delay

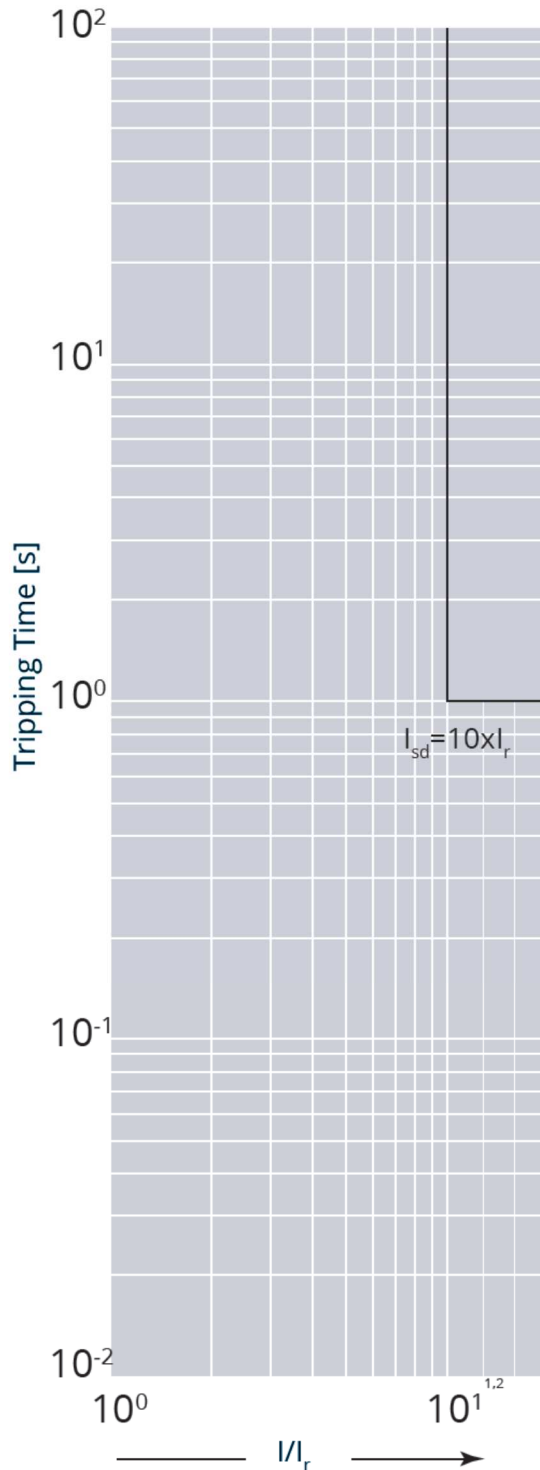
DMX³ 4000 circuit breakers
DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

9.1.2 TRIPPING CURVE FOR DMX³ 4000 (MP4 protection units): short time trip protection detail (only LI)



Update: 27/04/2018



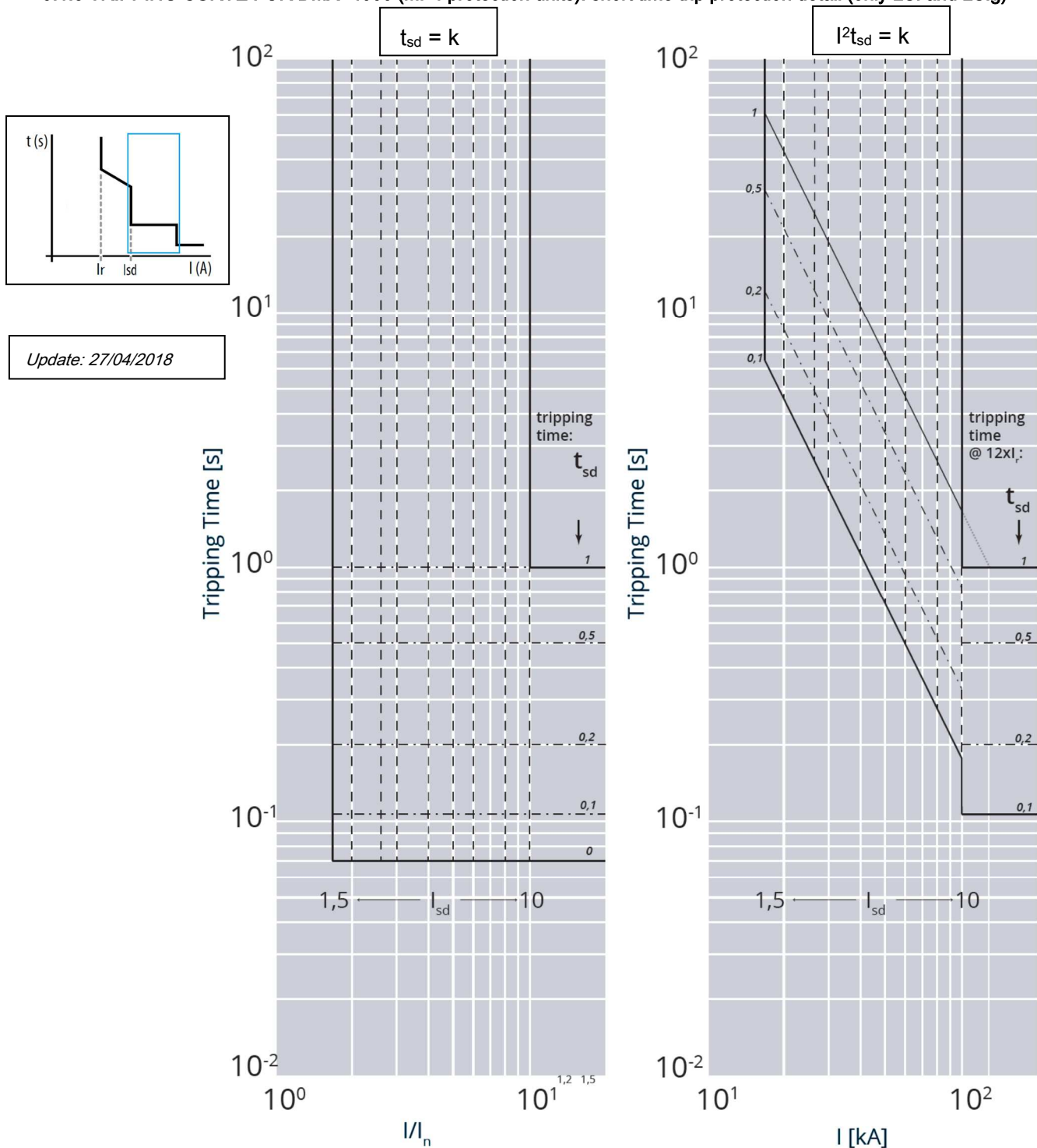
Value	Description
I	current
I _{sd}	short time setting current
t _{sd}	short time delay

DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

9.1.3 TRIPPING CURVE FOR DMX³ 4000 (MP4 protection units): short time trip protection detail (only LSI and LSIg)



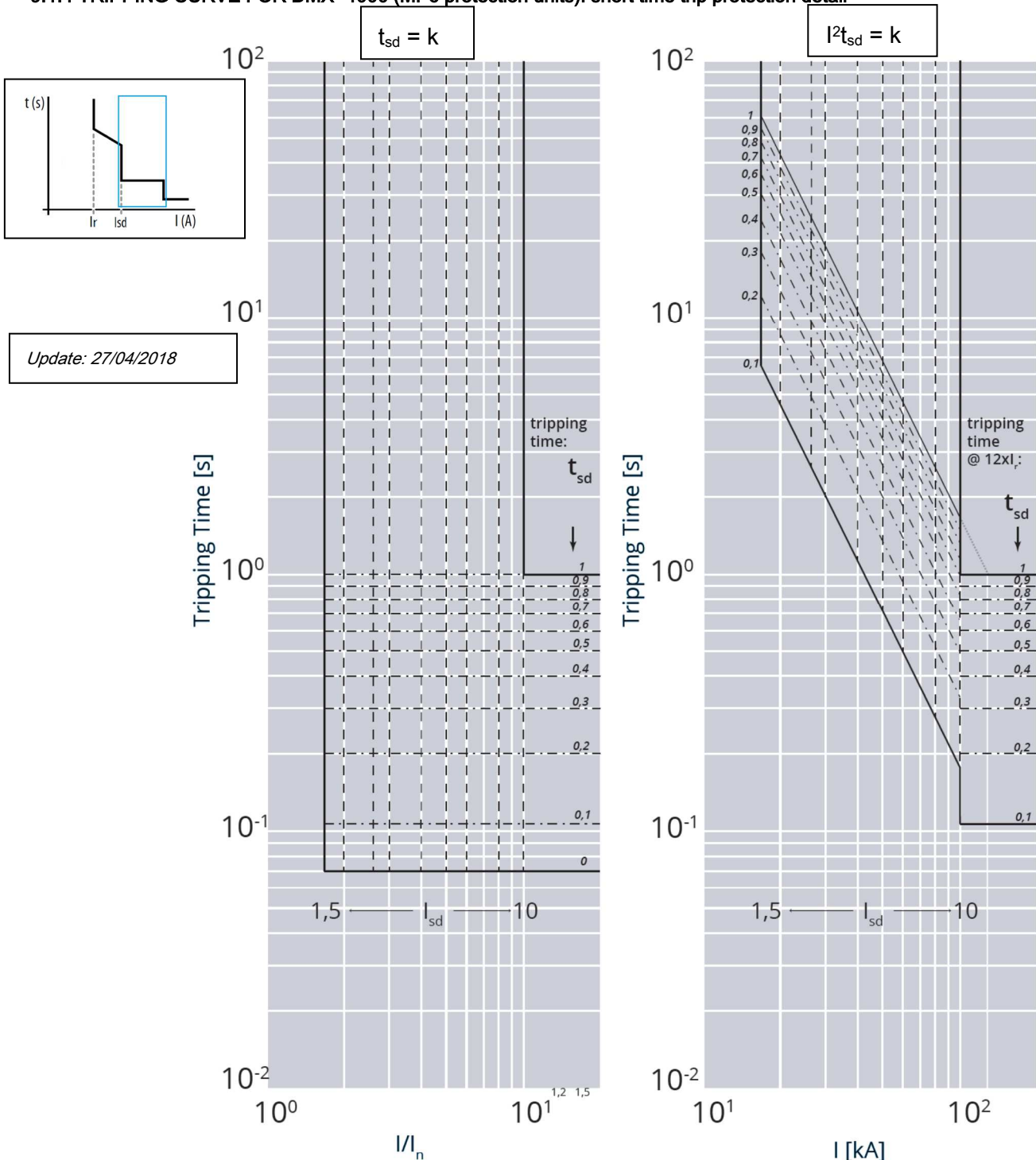
Value	Description
I	current
I_{sd}	short time setting current
t_{sd}	short time delay

DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

9.1.4 TRIPPING CURVE FOR DMX³ 4000 (MP6 protection units): short time trip protection detail



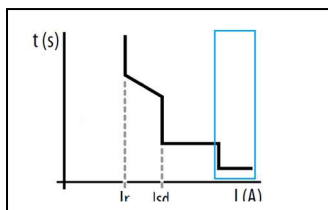
Value	Description
I	current
I_{sd}	short time setting current
t_{sd}	short time delay

DMX³ 4000 circuit breakers

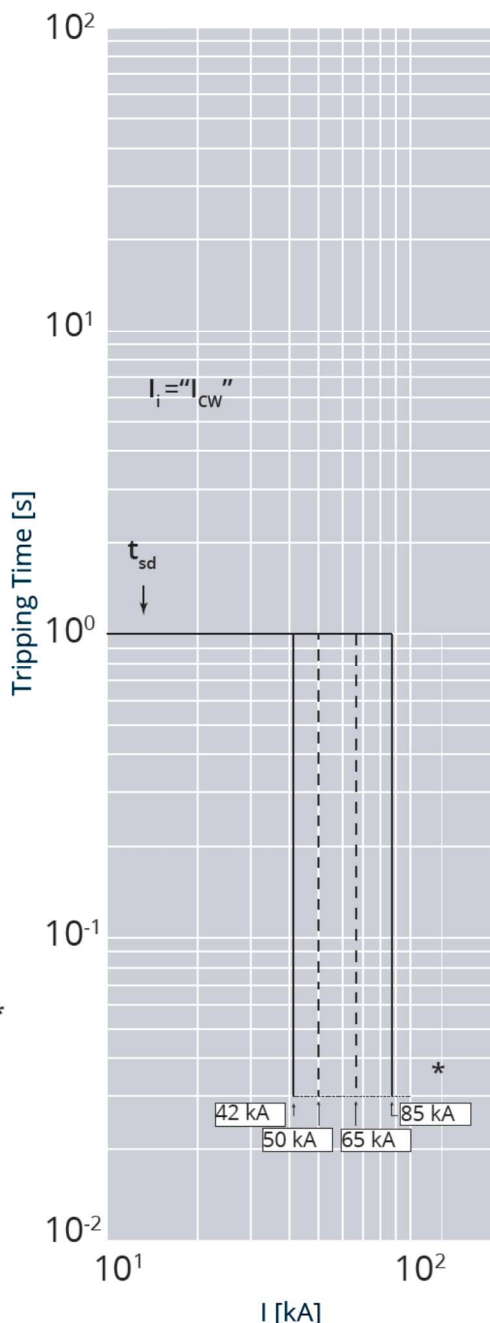
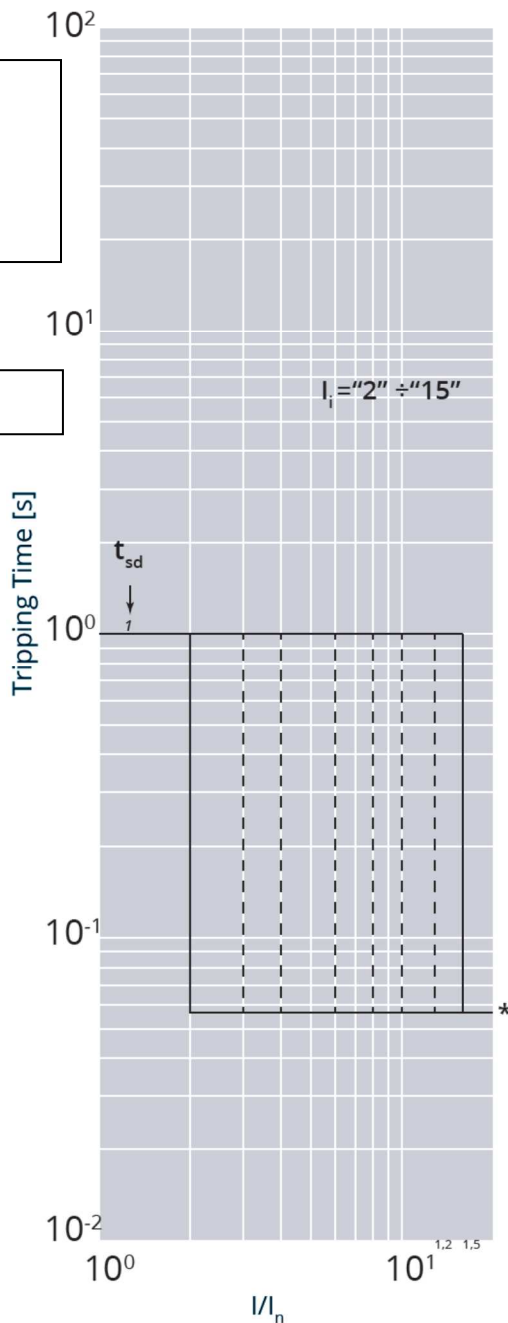
DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

9.1.5 TRIPPING CURVE FOR DMX³ 4000 (MP4 protection units): instantaneous trip protection detail (only LI)



Update: 25/06/2018



* Fixed Instantaneous override – I_{sf} →

Value	Description
I	current
I _n	rated current
t _{sd}	short time delay
I _i	Instantaneous release
I _{cw}	Rated short time withstand current

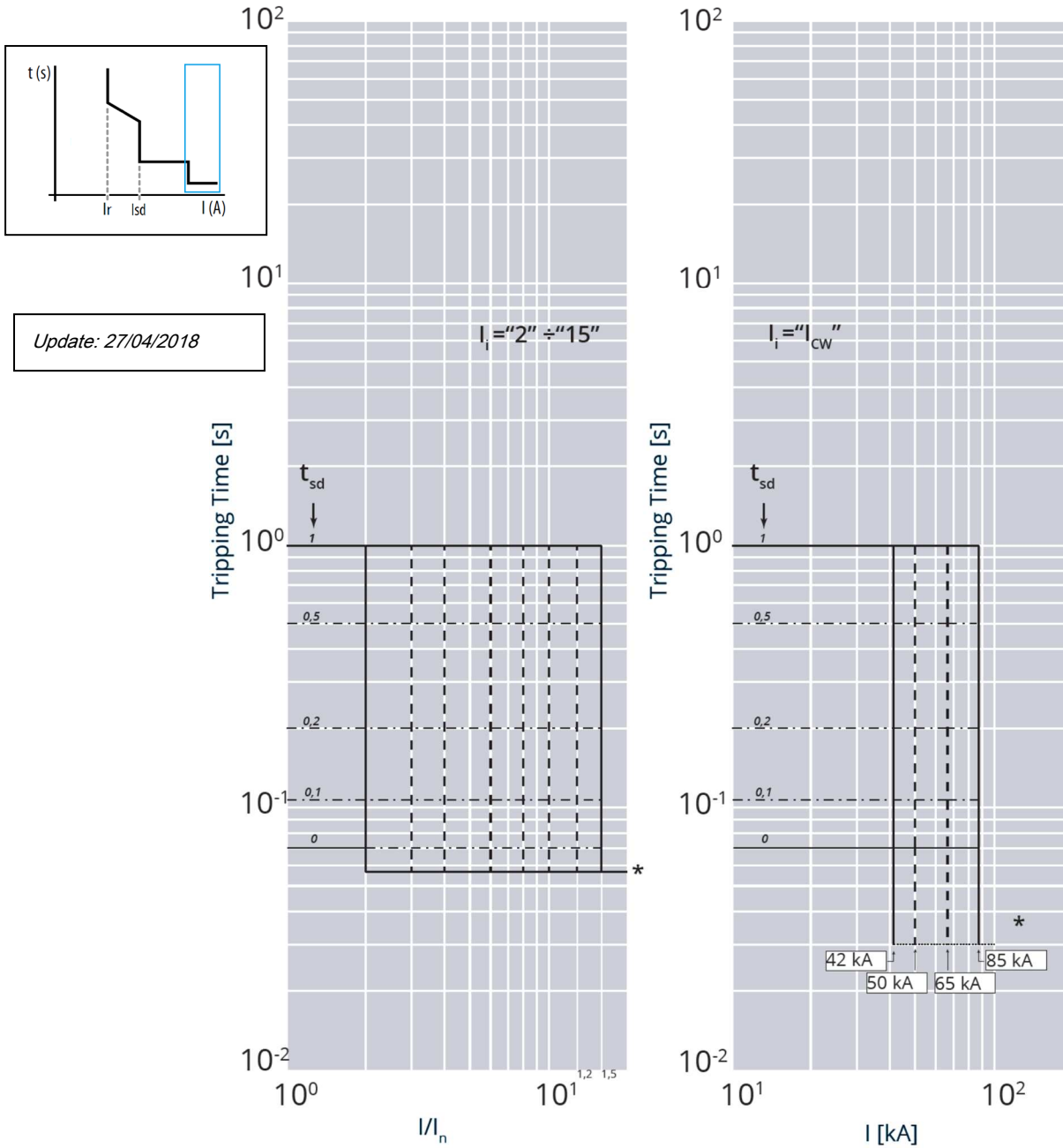
I _{cu}	Values for I _{sf}
50kA	50kA
65kA	65kA
100kA	85kA

DMX³ 4000 circuit breakers

DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

9.1.6 TRIPPING CURVE FOR DMX³ 4000 (MP4 protection units): instantaneous trip protection detail (only LSI and LSIg)



* Fixed Instantaneous override – I_{sf} →

Value	Description
I	current
I_n	rated current
t_{sd}	short time delay
I_i	Instantaneous release
I_{cw}	Rated short time withstand current

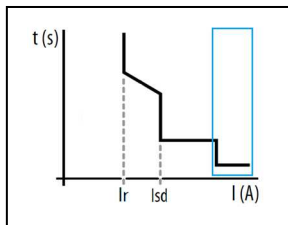
I_{cu}	Values for I_{sf}
50kA	50kA
65kA	65kA
100kA	85kA

DMX³ 4000 circuit breakers

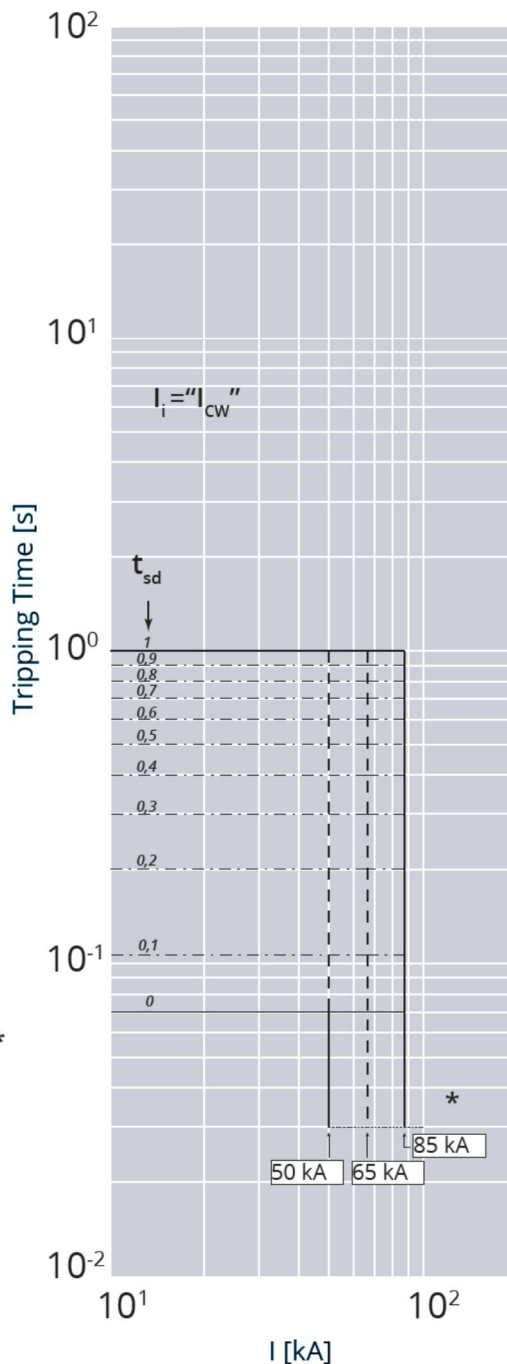
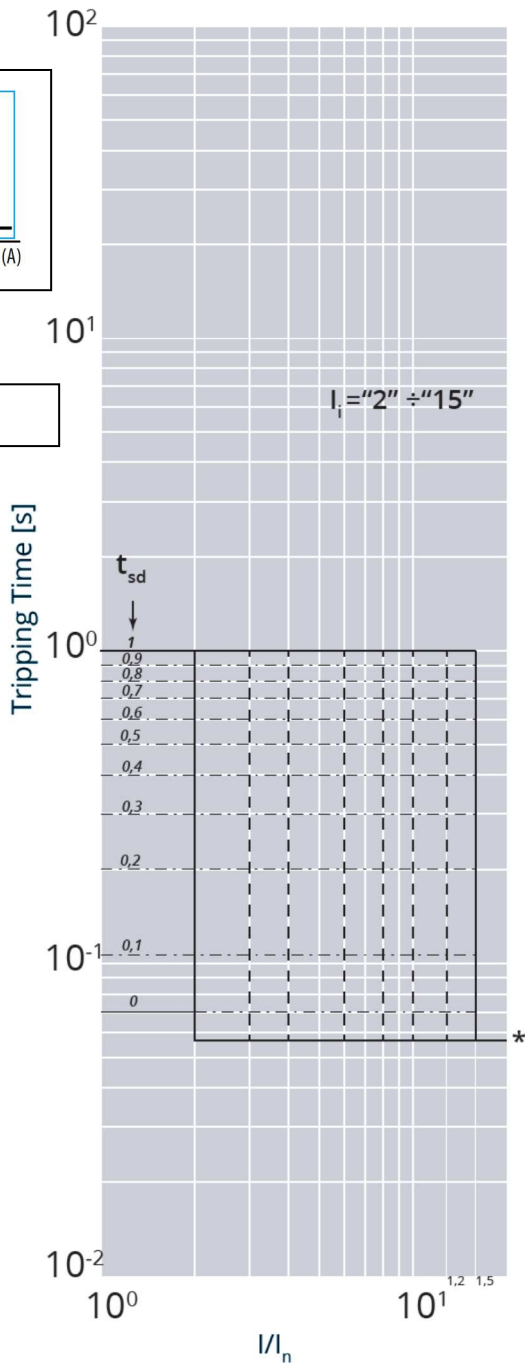
DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

9.1.7 TRIPPING CURVE FOR DMX³ 4000 protection units (MP6 protection units): instantaneous trip protection detail



Update: 27/04/2018



* Fixed Instantaneous override – I_{sf} →

Value	Description
I	current
I _n	rated current
t _{sd}	short time delay
I _i	Instantaneous release
I _{cw}	Rated short time withstand current

I _{cu}	Values for I _{sf}
50kA	50kA
65kA	65kA
100kA	85kA

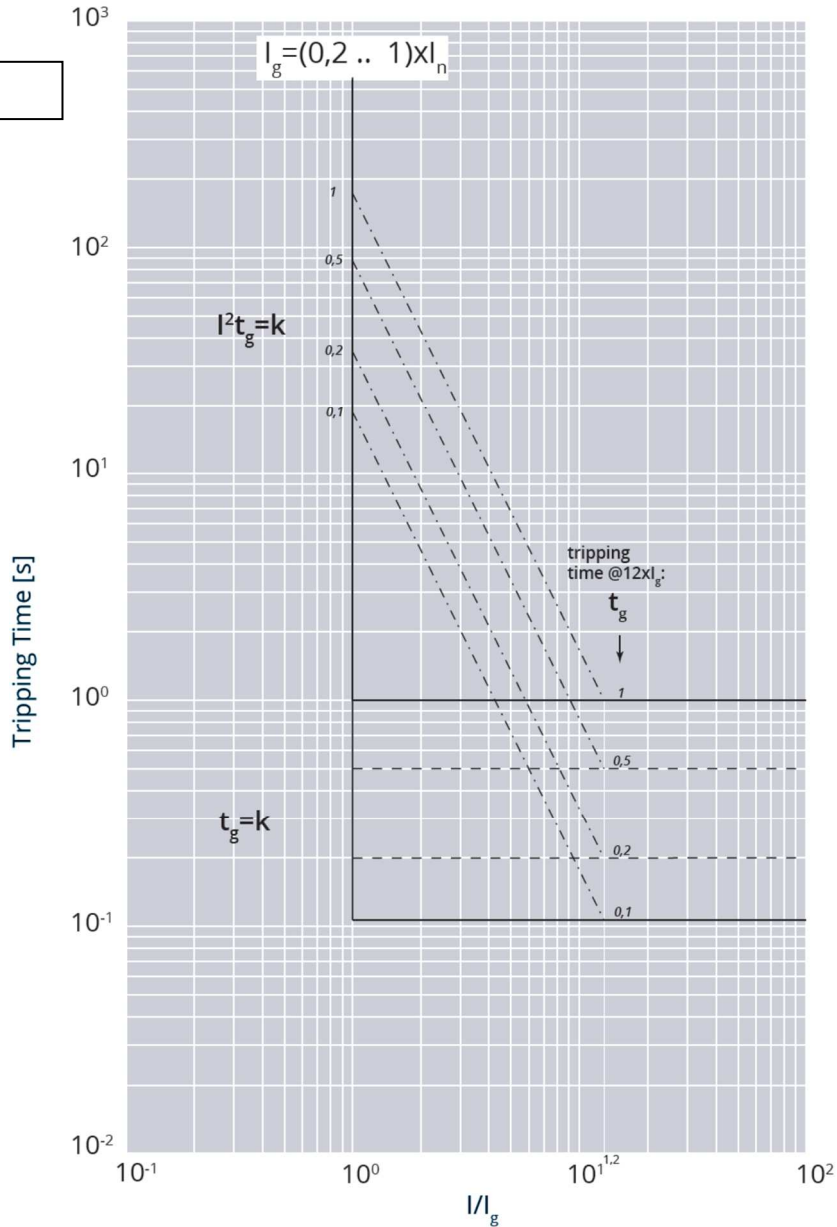
DMX³ 4000 circuit breakers
DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 /
 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 /
 87 / 88 / 97 / 98

9.1.8 Ground fault curve (MP4 protection units)

Only LSIg releases

Update: 27/04/2018



Value	Description
I	current
I_n	rated current
I_g	Ground fault current
t_{sd}	short time delay
$t_{sd} = k$	Constant tripping time setting
$I^2 t_{sd} = k$	Constant pass-through energy setting

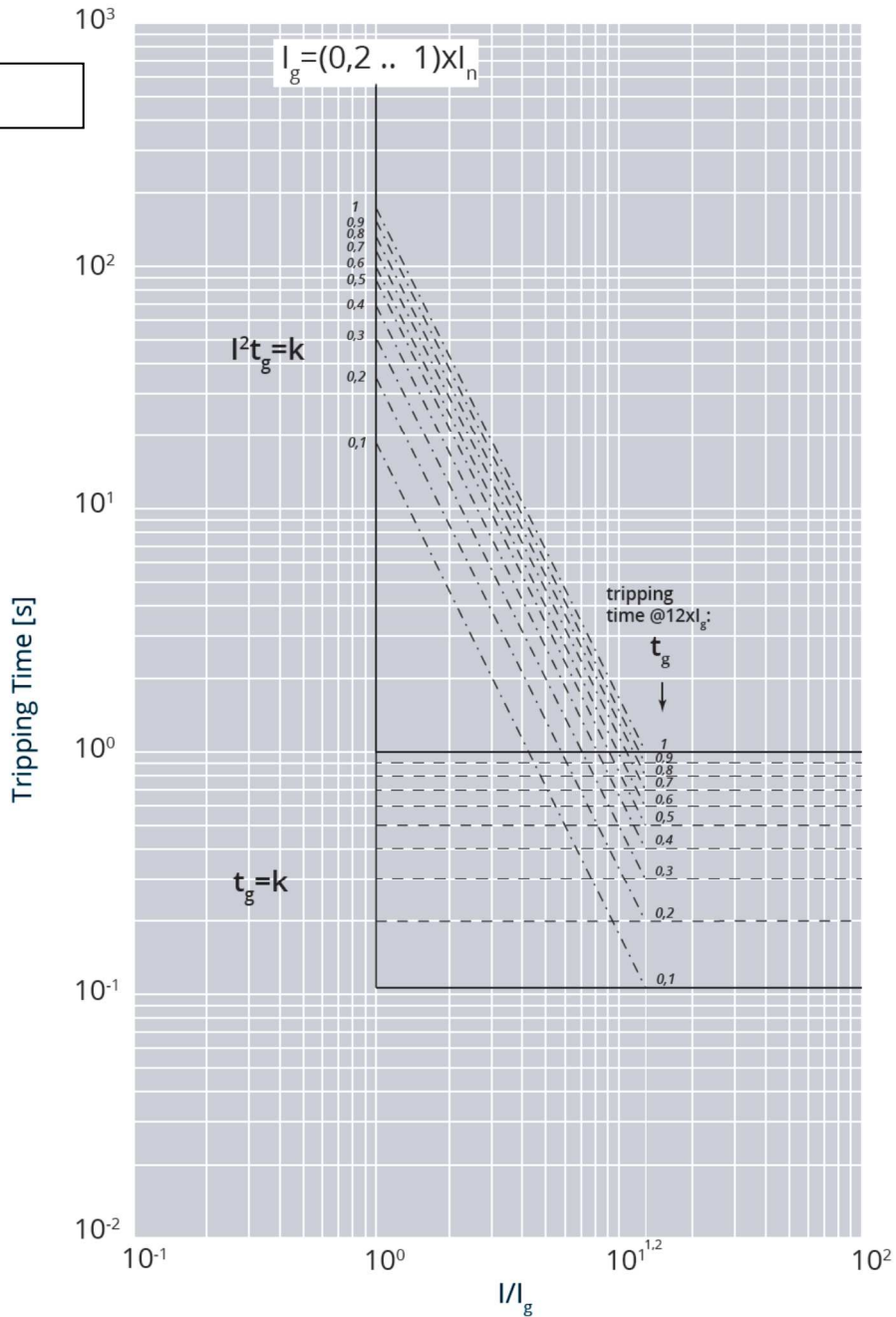
DMX³ 4000 circuit breakers
DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 /
 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 /
 87 / 88 / 97 / 98

9.1.9 Ground fault curve (MP6 protection units)

Only LSig releases

Update: 27/04/2018



Value	Description
I	current
I _n	rated current
I _g	Ground fault current
t _{sd}	short time delay
t _{sd} = k	Constant tripping time setting
I ² t _{sd} = k	Constant pass-through energy setting

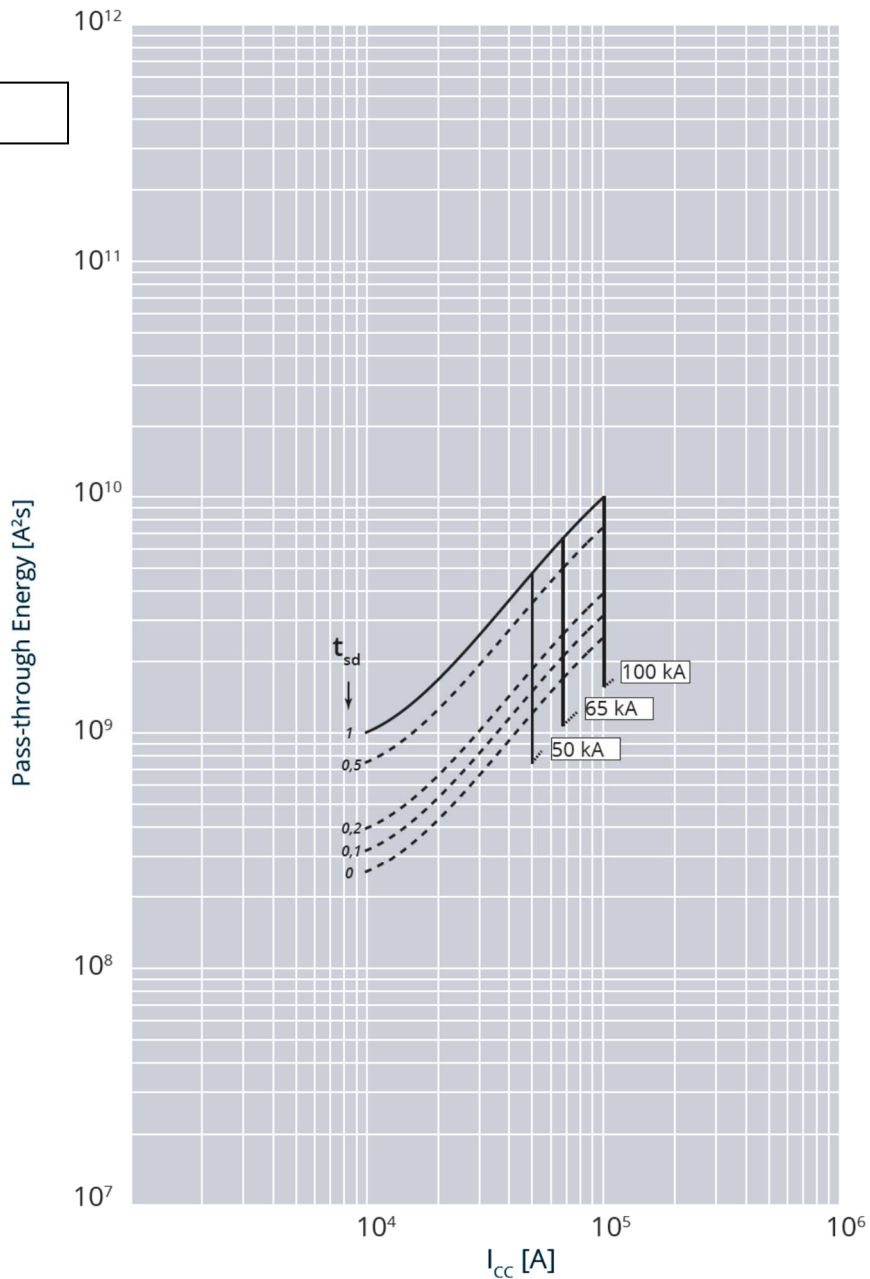
DMX³ 4000 circuit breakers
DMX³-I 4000 switch disconnectors

References: 0 286 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98 /
 0 287 27 / 28 / 37 / 38 / 47 / 48 / 57 / 58 / 67 / 68 / 77 / 78 / 87 / 88 / 97 / 98

9.2 PASS-THROUGH SPECIFIC ENERGY CURVE (at 415V)

Only LSIg releases

Update: 19/02/2018



Value	Description
I	current
I_n	rated current
I_g	Ground fault current
t_{sd}	short time delay
$t_{sd} = k$	Constant tripping time setting
$I^2 t_{sd} = k$	Constant pass-through energy setting